

## METHOD AND APPARATUS FOR ASSEMBLING AN ARRAY OF MICRO-DEVICES

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### Abstract

The invention describes a method and apparatus for deploying micromachined actuators  
10 in a plane which is orthogonal to the original fabrication plane of the devices. Using  
batch-processing, photolithographic procedures known in the micromachined electro-  
mechanical system (MEMS) art, a plurality of devices is constructed on a suitable  
substrate. The devices are then separated one from another by sawing and dicing the  
original fabrication wafer. The devices are rotated into an orthogonal orientation and  
15 affixed to a second wafer. The second wafer also contains circuitry for addressing and  
manipulating each of the devices independently of the others. With this method and  
apparatus, arrays of actuators are constructed whose plane of actuation is perpendicular to  
the plane of the array. This invention is useful for constructing  $N \times M$  fiber optic  
switches, which direct light from  $N$  input fibers into  $M$  output fibers.

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